

## WHAT IS CLAIMED IS:

1. A spinning reel slot machine, comprising:  
an image display device having a surface for producing images of simulated  
mechanical reels; and  
a plurality of optical fibers have first ends optically coupled to said surface of  
5 said image display device and seconds ends for displaying said  
simulated mechanical reels to a player of said slot machine, at least  
some of said second ends defining a curved display surface having a  
radius of curvature that approximates the radius of curvature of a  
mechanical reel.  
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2. The slot machine of claim 1, further including a flat transmissive window in  
front of said curved display surface.
3. The slot machine of claim 1, wherein all of said second ends define said  
15 curved display surface.
4. The slot machine of claim 1, wherein at least some of said second ends define  
a flat display surface adjacent to said curved display surface.
- 20 5. The slot machine of claim 4, wherein said flat display displays alphanumeric  
information and said curved display surface displays symbols on said simulated  
mechanical reels.
6. The slot machine of claim 1, wherein said radius of curvature is in the range of  
25 from about 4 to about 7 inches.
7. The slot machine of claim 1, wherein said image display device is a CRT  
display.

8. A method of operating a slot machine, comprising:  
selecting a random outcome in response to receiving a wager;  
determining a symbol grouping corresponding to said random outcome; and  
displaying said symbol grouping on ends of an array of optical fibers, said  
5 ends define a curved display surface having a radius of curvature that  
approximates the radius of curvature of a mechanical reel.
9. The method of claim 8, wherein said displaying includes transmitting images  
of said symbol grouping through said optical fibers from an image source.
10. A spinning reel slot machine, comprising:  
a plurality of mechanical reels that, in response to a wager, are rotated and  
stopped to randomly place symbols on said plurality of mechanical  
reels in visual association with a display area, one of said plurality of  
15 mechanical reels having a transparent window at a location where a  
symbol would normally be present; and  
a video display located behind said one of said plurality of mechanical reels  
and in alignment with said display area, said video display displaying a  
video symbol when said transparent window stops in said display area,  
20 said video symbol being observable through said transparent window  
by a player of said slot machine.
11. The slot machine of claim 10, wherein said video display provides a backlight  
for a symbol on said one of said mechanical reels when said symbol stops in said  
25 display area.
12. The slot machine of claim 10, wherein said video display displays a video  
symbol while said transparent window moves through said display area.
- 30 13. The slot machine of claim 11, wherein said video display displays a video  
symbol while said transparent window moves slowly through said display area and  
displays no video symbol while said transparent window moves quickly through said  
display area.

14. The slot machine of claim 10, wherein said video display is sized to cover substantially all of said display area.

15. The slot machine of claim 14, wherein said video display provides backlighting for symbols adjacent to said transparent window and simultaneously displays said video symbol through said transparent window.

16. The slot machine of claim 14, wherein said display area includes multiple symbols on said one of said mechanical reels.

17. The slot machine of claim 16, wherein said display includes three symbols.

18. The slot machine of claim 10, further including a lens between said video display and said one of said plurality of mechanical reels.

19. The slot machine of claim 18, wherein said lens has a curved surface near said one of said mechanical reels.

20. The slot machine of claim 19, wherein said curved surface has a radius of curvature that approximates a radius of curvature of said one of said plurality of mechanical reels.

21. The slot machine of claim 10, wherein said video display is comprised of ends of a plurality of optical fibers, said optical fibers transmitting light from an image source.

22. The slot machine of claim 10, wherein said video display is at a fixed location behind said one of said mechanical reels.

23. The slot machine of claim 10, wherein each of said plurality of mechanical reels includes a transparent window and an associated video display.

24. The slot machine of claim 10, wherein each of said plurality of mechanical reels includes a transparent window and said video display provides video symbols for each of said plurality of mechanical reels.

5 25. The slot machine of claim 10, wherein said video symbol is determined based on the number of rotations of said one of said plurality of mechanical reels.

26. A method of operating a slot machine having mechanical reels, comprising:  
selecting a random outcome in response to receiving a wager;  
10 determining a symbol grouping corresponding to said outcome to be displayed by said mechanical reels; and  
displaying said symbol grouping on said mechanical reels, at least one of said symbols being a video symbol displayed behind one of said mechanical reels and visible through a transparent window in said one  
15 of said mechanical reels.

27. The method of claim 26, wherein said video symbol is displayed by a video display, said video display providing backlighting for symbols on said one of said mechanical reels.

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28. The method of claim 26, wherein each of said mechanical reels includes a transparent window and a corresponding video display.

29. The method of claim 26, wherein each of said mechanical reels includes a  
25 transparent window and one video display provides video symbols for each mechanical reel.

30. A spinning reel slot machine, comprising:  
a plurality of mechanical reels that, in response to a wager, are rotated and  
30 stopped to randomly place symbol regions on said plurality of reels in visual association with a display area, one of said plurality of mechanical reels having a miniature image display located at a selected one or more of said symbol regions.

31. The slot machine of claim 30, wherein each of said plurality of mechanical reels has a miniature image display located at a selected one or more of said symbol regions.

5 32. The slot machine of claim 31, wherein each of said plurality of mechanical reels has a miniature image display located at each of said symbol regions.

33. The slot machine of claim 30, wherein said one of said plurality of mechanical reels has a miniature image display located at each of said symbol regions.

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34. The slot machine of claim 30, further including a microcontroller fixed to said one of said plurality of mechanical reels for controlling an output of said miniature image display.

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35. A spinning reel slot machine, comprising:  
a plurality of mechanical reels that, in response to a wager, are rotated and stopped to randomly place symbol regions on said plurality of reels in visual association with a display area; and  
at least one video display for simulating a mechanical reel and displaying a  
20 plurality of video symbols adjacent to said plurality of mechanical reels, said video symbols, in response to said wager, moving across said video display and stopping on said video display at approximately the same time as said plurality of mechanical reels are stopped.

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36. The slot machine of claim 35, wherein said video display also provides diagnostics.

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37. A spinning reel slot machine, comprising:  
a plurality of mechanical reels that, in response to a wager, are rotated and stopped to randomly place symbols on said plurality of reels in visual  
association with a display area, one of said plurality of mechanical  
reels having a symbol location having first features that are visible in  
response to exposure to a first wavelength of light and second features  
that are visible in response to exposure to a second wavelength of light,

said first features defining a first symbol in said symbol location and  
said second features defining a second symbol in said symbol location;  
and

a light source located adjacent to said one of said plurality of mechanical reels  
and providing light into said display area, said light source capable of  
delivering said first wavelength of light to said symbol location and  
said second wavelength of light to said symbol location.

38. The slot machine of claim 37, wherein each of said plurality of mechanical  
reels has a symbol location with first features that are visible in response to exposure  
at one wavelength of light and second features that are visible in response to exposure  
to another wavelength of light.

39. The slot machine of claim 37, wherein said first and second wavelengths are in  
the visible light spectrum.

40. The slot machine of claim 37, wherein one of said first and second  
wavelengths is in the ultraviolet spectrum.

41. The slot machine of claim 37, wherein said light source is an LED display.

42. The slot machine of claim 37, wherein said light source also provides  
backlighting for symbols on said one of said mechanical reels.

43. The slot machine of claim 37, wherein said one of said mechanical reels  
further includes a transparent window at a symbol location, said light source capable  
of displaying a video symbol through said transparent window.

44. The slot machine of claim 37, wherein said light source is located behind said  
one of said mechanical reels.

45. A spinning reel slot machine, comprising:

a plurality of mechanical reels that, in response to a wager, are rotated and stopped to randomly place symbols on said plurality of reels in visual association with a display area, one of said plurality of mechanical reels having a symbol location having first features that are visible in response to exposure to a first polarization state of light and second features that are visible in response to exposure to a second polarization state of light, said first features defining a first symbol at said symbol location and said second features defining a second symbol at said symbol location;

a light source located behind said one of said plurality of mechanical reels and in alignment with said display area; and

a polarizing filter associated with said light source and capable of transmitting to said display area said first polarization state of light and said second polarization state of light.

46. The slot machine of claim 45, wherein each of said plurality of mechanical reels has a symbol location with first features that are visible in response to exposure to one polarization state of light and second features that are visible in response to exposure to another polarization state of light.

47. The slot machine of claim 45, wherein said polarizing filter is a unitary component capable of being rotated to alter said polarization state of light from said light source.

48. The slot machine of claim 45, wherein said light source and said polarizing filter are two distinct components.

49. The slot machine of claim 48, wherein said polarizing filter is between said light source and said display area.

50. The slot machine of claim 45, wherein said first and second features are comprised of a film of polarized material.